BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of		
Application by Verizon New England Inc., Verizon Delaware Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks, Inc., and Verizon Select Services Inc., for Authorization To Provide In-Region, InterLATA Services in New Hampshire and Delaware	)	WC Docket No. 02-157

JOINT DECLARATION OF
CATHERINE E. PITTS AND MICHAEL R. BARANOWSKI

I. QUALIFICATIONS

1. **Catherine E. Pitts**. My name is Catherine E. Pitts (formerly Petzinger). I am a consultant to AT&T on switch cost modeling issues. My business address is 810 Long Drive Road, Summerville, South Carolina.

2. I have an MBA from Rutgers University, New Jersey, and eighteen years of experience in the telecommunications industry. Before becoming an independent consultant earlier this year, I was employed for five years by AT&T Corporation as a District Manager in Regulatory and Legislative Affairs. Prior to joining AT&T, I was employed by Bellcore (now Telcordia Technologies) for 13 years. While at Telcordia, I was one of three individuals who designed and implemented new incremental costing methodology into the Switching Cost Information System/Intelligent Network (SCIS/IN) model. The SCIS/IN model is used to identify the costs associated with switching

"features" (*e.g.,* call waiting, call forward, and caller ID) and belongs to the family of SCIS models used to determine the costs associated with switching in general. I was Telcordia's lead subject matter expert on feature costing, as well as a subject matter expert on the 1ESS, 1A ESS and 5ESS switches. When I was promoted to lead the SCIS group of approximately 20 people, I was responsible for the technical development, production, documentation, and customer care for the Switching Cost Information System/Model Office (SCIS/MO) and SCIS/IN models.

3. My experience also includes extensive consultation in the use of cost models in various cost studies in the United States and abroad. I have presented expert testimony regarding switching investments and costs in numerous unbundled network element ("UNE") and Universal Service Fund ("USF") proceedings. Most significant for purposes of this proceeding, I have participated in Verizon cost proceedings in New York, Virginia, Maryland, Massachusetts, Pennsylvania, New Hampshire and Rhode Island.

4. **Michael R. Baranowski**. My name is Michael R. Baranowski. I am a Managing Director of the Financial Consulting Division of FTI Consulting, Inc. My business address is 1201 Eye Street, NW, Suite 400, Washington, DC, 20005. In that position, I conduct economic and cost analysis for a variety of clients. Since 1996, I have been directly and continuously involved in interconnection agreement arbitrations and other network element rate proceedings before state public utility commissions. In that regard, I am intimately familiar with the cost models submitted by Verizon – Delaware and other incumbent local exchange carriers. I am submitting this declaration at the request of AT&T Corp. ("AT&T").

5. The purpose of this declaration is to demonstrate that Verizon's Delaware and New Hampshire switch unbundled network element rates are substantially inflated by myriad clear TELRIC errors.

II. VERIZON-DELAWARE SWITCH UNE RATES RESULT IN A MASSIVE COST OVERRECOVERY

6. Verizon's switch usage rate contains TELRIC violations that result in a substantial over-recovery of forward-looking switching investment. Verizon's switch usage rate is comprised of a switch usage cost per minute of use plus vertical features costs that have been converted from a cost per activation or cost per line, to a cost per minute of use. Inconsistencies between the development of forward-looking switch investments in the SCIS Model and the assumptions used to compute the minute of use usage costs and vertical feature cost skew the UNE switch rates. These serious TELRIC errors allow Verizon to over-recover its initial switch investment by *126 percent*.

7. Using the SCIS cost model provided by Verizon, it is possible to determine the amount of switching usage investment (excluding return on investment, overhead, and other additional items) that Verizon will actually recover given its current Delaware switching usage rates. That number can then be compared to Verizon's actual switch investment to determine whether Verizon's Delaware switching usage rates recover the same amount as Verizon's actual initial switching usage investment.

8. Verizon's total forward-looking switching investment is *** $ ***. Reducing that amount by the portion of the switching investment that is attributable to non-usage port investment *** $ *** shows that

Verizon's total investment in switching usage is *** $ ***.[1] To recover that investment, Verizon charges an average terminating/originating switching usage rate of $0.0025283 (before joint and common costs). However, that per minute rate also recovers operating expenses, return on investment and other items. To determine the portion of Verizon's switching usage rate that recovers only initial switching usage investment, it is necessary to multiply the switching usage rate by the proportion of the Verizon annual cost factor representing depreciation, *i.e.,* return of initial investment. Depreciation represents *** *** percent of the Verizon switching annual cost factor.[2] Verizon's switching usage rate, therefore, includes ***

*** to recover Verizon's initial switching usage investment. Verizon's cost model shows that Verizon will recover this rate over ***

*** minutes per year,[3] *i.e.,* Verizon will recover *** *** per year over 16 years. Thus, Verizon will recover *** *** in switching investment costs over the amortized life of the switch. But that is 126 percent *higher* than Verizon's initial switching usage investment of *** ***. This analysis is summarized in Table 1 below.

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[1] This base initial investment does not reflect investment in vertical features hardware. However, that investment typically accounts for no more than 2 percent of base switch investment and, therefore, the omission of vertical feature hardware investment has no material affect on this analysis.

[2] Verizon's switching annual cost factor is *** ***. The depreciation portion of that factor, based on a 16 year switch life, is *** ***.

[3] This figures represents the annual minutes input by Verizon to the SCIS Model, less the percentage of non-conversation time reflected by Verizon in its development of switch usage rates. This assumption assumes that the number of minutes will not grow over time. In reality, minutes are likely to grow from year to year, which would allow Verizon to spread its costs over additional minutes, thereby decreasing its switching rates. By assuming that rates will not grow over time, this analysis *understates* the amount that

Table 1. Demonstration of Over-recovery of Usage Related Switching Investment Under Verizon's Proposed Hybrid Rate.

Description	Amount
Total SCIS Switching Investment	*** ***
Portion Assigned to Port	*** ***
Usage Related Switch Investment	*** ***
Average Verizon O&T Usage Rate (Before Joint & Common Cost and GRL)	*** ***
Depreciation Portion of ACF	*** ***
Annual Minutes	*** ***
Switch Life (Years)	*** ***
Usage Based Return of Investment:	*** ***
Percent of Recovered Amount to Investment	226.3%
Percent of Over-Recovery	126.3%

9.

10. Given Verizon's approach to switching cost estimation in Delaware – an approach that Verizon has not used in New Hampshire – it is not surprising that Verizon's switching rates are massively inflated. Verizon-Delaware used Telcordia's SCIS/MO model as the foundation for its switch UNE rates. Verizon-Delaware relies on the unit cost outputs of SCIS/MO to build up the cost of a minute of use (bottom-up approach), whereas Verizon-New Hampshire used the total traffic sensitive investment and divided by total minutes to derive the top-down minute of use cost. Theoretically the two approaches should given the same result, allowing for differences in costs and traffic levels; however, that is not always the case because the bottom-up approach requires three separate sets of inputs that are spread among multiple models to be consistent. If these inputs are not consistent, then incorrect results will be produced. The inputs do not take the same form so it is not a simple case of comparing the inputs across the models. The SCIS/MO model requires users to enter percent utilization of processing capacity at

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Verizon is over-recovering its switching usage rates.

the time of switch placement, five years after switch placement and at time of switch replacement. These are critical inputs because they determine the denominator of the equation that distributes the significant getting started cost of the switch over utilized processor milliseconds. If utilization is underestimated compared to actual historical and realized future traffic demand, the cost for a processor millisecond will be overstated. The cost per processor millisecond is used in formulas to build up the cost of a minute of use, thus resulting in an inflated minute of use rate.

11. Another set of inputs to SCIS/MO require the user to enter busy hour traffic on a per line basis (e.g., busy hour calls per line). These traffic inputs should be correlated to the processor utilization inputs described above, but there is no consistency check in the model. Indeed, if it were a simple number comparison, the model could perform this input edit check, but it is extremely difficult to reconcile the inputs asking for percent processor utilization at different time periods with the average traffic on a per line basis. Note that the processor utilization inputs are entered for each switch in the network and the traffic per line is entered for each type of line and trunk (i.e., analog lines, IDLC lines, trunks, etc.) These inputs are used to calculate traffic sensitive investments that ultimately are incorporated into the minute of use rate element. If the traffic level inputs do not match realized demand, the inaccurate cost results produced by SCIS/MO, when multiplied against the realized demand, will result in cost under or over recovery.

12. The third set of usage inputs are used in the sister model of SCIS/MO called SCIS/IN. SCIS/IN uses outputs from SCIS/MO, such as the cost per processor

millisecond, and determines the cost of individual features.[4] Each feature requires busy hour usage data; for example, the number of call waiting calls in the busy hour per line. Again, there is no easy reconciliation between the traffic inputs and processor utilization inputs in the SCIS/MO model and the usage inputs in the feature model. It is entirely possible the processor utilization inputs have no correlation at all to the total traffic being entered into SCIS/MO as per line inputs and as usage inputs in the SCIS/IN feature model. If the processor utilization is under-estimated, leading to an inflated getting started cost per millisecond, this inflated getting started cost per millisecond is multiplied against the usage in the features to cause overstated feature costs. Of course, if the feature usage itself is overstated, the inflation is doubled. Critically, Verizon adds the feature costs to the minute of use rate element, causing potentially massive usage rate element overstatements that lead to severe cost overrecovery as can be seen in the cost recovery analysis above. Underestimates of processor utilization and/or overestimates of feature usage is a typical reason why the total switch investment overrecovery, explained previously, occurs.

A. Verizon's Switching Rates Are Inflated Because They Reflect Outdated Switch Discounts.

13. The switch investment costs underlying the Delaware UNE rates are further overstated because they are based on stale switch discount and switch investment data. The Verizon Phase I cost studies were initially developed late in 1996. The switch

[4] Note that in some calculations in the SCIS/MO model, it will produce a 0 Getting Started Cost per millisecond and report it as a single fixed cost if user inputs indicate that the switch will be replaced before full processor utilization is achieved. Verizon did not use this form of calculation in its cost study; rather it used the calculation form that always averages the getting started cost over the processor milliseconds.

discounts used by Verizon in its cost studies reflect the discounts on replacement and growth switching equipment that Verizon was able to achieve during the early to mid-1990's. Since that time, switch vendors have offered more aggressive – indeed steeper – discounts on new switching equipment. In addition to offering steeper discounts on replacement switch equipment, vendors have increased the level of discounts available on growth or add-on equipment to the point where these discounts are almost to the level of the traditionally higher new switch discounts. By failing to update the switch rates to reflect the steeper discounts now available for both new and add-on switching equipment, the forward-looking switch investments, and thus the switch rates, are overstated.

14. Furthermore, switch components have been evolving, allowing greater capacities, thus reducing unit costs.[5] And Verizon's merger with Bell Atlantic that doubled the number of switches of the merged entity, and the subsequent merger with GTE vastly increased the purchase power of Verizon. This increased purchasing power allows Verizon to negotiate lower switch prices than it could obtain prior to the mergers. Verizon's use of old, higher prices at the time of the hearing resulted in switch UNE rates that were not cost based.

B. Verizon's Switching Rates Are Inflated Because They Reflect A Missallocation Of Costs.

15. Verizon-Delaware misallocates fixed costs to the minute of use rate element and features. The "getting started" cost of a switch is often called the "first cost" or "start-up cost" and is *** *** percent of the total switch investment in Delaware.[6]

[5] Examples include trunk peripheral equipment (SONET-based), GR303 integrated digital loop carrier (IDLC), and ISDN packet handling equipment.

[6] This can be calculated from Verizon's SCIS Total Investment output report by dividing

A small percentage of this cost is associated with the central processor, and the remainder reflects the costs associated with maintenance, administrative, test, and spare equipment, memory, and other common equipment in the switch. The getting started cost of a switch should be assigned to the port UNE elements. Verizon has improperly allocated the "getting started" switch costs produced by the SCIS/MO model to the minute-of-use (traffic sensitive) and feature rate elements.[7] These "getting started" switch costs do not vary with respect to the number of lines and trunks on the switch or switch usage. The line and usage inputs to SCIS can be changed, but the total "getting started" cost will not vary.[8] The average current processor utilization for Verizon switches in Delaware is *** . *** At these low levels of processor utilization, the amount of traffic could *** *** without exhausting the processors; therefore, using the processor does not have an economic cost because adding calls or features causes no additional switch processing costs.[9] Likewise, removing calls or features from the switch will not result in a decline in processing costs. Just as it is imperative that non-recurring costs be recovered via non-recurring rate elements, it is critical that non-traffic sensitive switch costs be recovered via non-traffic sensitive switch rate elements. Otherwise, as minutes of use increase, over-recovery of the getting started cost will occur because the

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the total getting started cost by the total switch investment.

[7] One report in SCIS/MO spreads the total getting started cost over processor milliseconds. Verizon recovers the getting started cost from the minute of use and feature rates based on the number of processor milliseconds used by calls and features.

[8] This can be seen in the office-by-office results in Verizon's SCIS database. The "getting started" cost of a switch does not change, except when remote switches are added to a host switch and the remote's "getting started" costs are added to the host's "getting started" cost.

[9] Verizon acknowledged this in Massachusetts when it determined to exclude getting started costs from the reciprocal compensation rate because additional traffic did not

getting started costs do not change as minutes increase. The mis-assignment of ***

*** of the total switch investment to the minute of use rate element will result in severe cost overrecovery as minutes grow and Verizon collects increased revenues, but its fixed costs remain static.

III. VERIZON'S NEW HAMPSHIRE SWITCHING RATES ARE INFLATED BY NUMEROUS CLEAR TELRIC ERRORS.

A. The Unusual Process By Which Switch Rates Were Set In New Hampshire Led To Switch Rates That Are Not Based On Costs.

16. The rates approved by the New Hampshire PUC are the result of a stipulation agreement between Verizon and Staff and are not based on costs. Staff requested Verizon to run its cost model assuming a meld of 80% new switch discount and 20% growth discount. Verizon and Staff agreed to use a fully installed switch price of $325 price per line for switching with no reference to a cost basis. Verizon modified some switch cost study inputs to achieve the $325 per line target and acknowledged that the justification came after the $325 target was agreed upon. In cross examination, Mr. Baker admitted "[H]ere we have a number that falls out of the stipulation, and here we've got the set of data samples that's fallen at our feet that we're trying to use to verify." The data samples that were then relied upon in the order to justify the switch investment, however, were not valid. The switches had been purchased prior to 1992 under contracts that had higher prices than Verizon's contracts that were available at that time. Another set of data samples involved primarily remote switches, all of which were smaller than the normal remote switch in New Hampshire, thus producing a higher cost per line as admitted by Verizon in the hearings. The New Hampshire PUC subsequently reduced the

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cause any incremental getting started cost.

$325 to $294.61 to reflect a reduction in engineering and installation, but did not modify the underlying switch material investment. Nor did the PUC address the important issue of mis-allocating fixed costs to the minute of use rate element.[10] Verizon's arbitrary reduction of selected switch UNE rates on June 14, 2002, were not shown to remedy the inflated switch material investments that relied upon flawed sample data for justification.

B. Verizon's Rates For Unbundled Switching Were Developed Using Contract Prices That Were Outdated At The Time Of The 1998 Proceeding.

17. Correct switch investments are essential in the calculation of TELRIC-based rates for unbundled switching. Verizon used a 1995 version of the SCIS/MO model to develop the switch investments that underlie the rates for unbundled switching. Telcordia typically releases at least one update per year, making the model version three-years old in 1998. In addition, the switch contract prices used to determine the discount input for SCIS/MO model were vintage 1994, even though more recent contracts were available.[11] As described earlier, the cost justification for the arbitrary $325 total installed switch investment relied upon switch purchase prices from 1992 and earlier.

18. For several reasons, using more recent information would dramatically reduce the per-line investment cost of switching. First, it is well known that switch prices are declining for both the purchase of new switch equipment and for add-on equipment to existing switches ("growth"). Second, switch components have been evolving, allowing

[10] Note that some TELRIC cost issues were raised verbally in the hearing, and not in written testimony, because the stipulation agreement was made after pre-filed testimony was submitted.

[11] This specific issue was raised at the New Hampshire PUC hearings on September 3.

greater capacities, thus reducing unit costs.[12] Third, Verizon's merger with Bell Atlantic that doubled the number of switches of the merged entity, and the subsequent merger with GTE vastly increased the purchasing power of Verizon. This increased purchasing power allows Verizon to negotiate lower switch prices than it could obtain before the mergers. Verizon's use of old, higher prices at the time of the hearing resulted in switch UNE rates that were not cost based.

C. Verizon's Rates Are Based On Outmoded Technology Assumed In A 1995 Version Of SCIS.

19. The SCIS/MO model periodically purges old technology from the model and replaces it with new components as they are made available from switch manufacturers. The old version of SCIS/MO that was used in New Hampshire therefore reflected older technology. In addition, Verizon's inputs contributed to the use of old technology when it assumed all digital loop carrier lines were served via the old TR008 SLC-96 technology instead of the forward-looking GR303. In particular, TR008 has very little dedicated port cost, but a high usage-sensitive cost as modeled in SCIS/MO, resulting a low port rate, but contributing to an excessive MOU rate. The cost and engineering efficiency of GR-303 (formerly called TR-303) is well known and widely accepted in the industry. Indeed, another incumbent LEC, BellSouth, recently filed expert testimony acknowledging that

> Generic Requirement 303 ("GR-303") (authored by Bellcore) provides a set of generic requirements that describe more flexible [than TR008] NGDLC system types and a more flexible interface at a local digital switch. . . . The concentration allowed over these interfaces is variable and can be matched to the services being made available from the remote

[12] Examples include trunk peripheral equipment (SONET-based), GR303 integrated digital loop carrier (IDLC), and ISDN packet handling equipment.

> NGDLC site to allow the most economic concentration ratio consistent with the service being provided. While there are many variables that impact the decision of which switch termination type to use for the interface between a remote NGDLC site and the local digital switch, generally the most economic configurations are provided by using GR-303 sites with more than 150 lines in the three to five year planning period.

Direct Testimony of W. Keith Milner on behalf of BellSouth Telecommunications, Inc. October 1, 2001, Georgia Docket No. 14361-U.

20. Based on the SCIS/MO data inputs Verizon made available in its August 1998 cost study, *none* of the lines in Verizon's New Hampshire study were modeled as forward-looking GR-303 IDLC lines. Instead, Verizon assumed all of the IDLC lines would employ older technology based on TR-008 standards (specifically Verizon used TR-008 Mode I). Verizon's cost study assumption that approximately 90 percent of the lines in New Hampshire are on less-efficient IDLC produces switch UNE rates that exceed TELRIC.

D. Verizon Mis-Allocated Fixed Costs To The Volatile Minute Of Use Rate Element Resulting In A Mis-Match Between Cost-Causation And Cost Recovery.

21. As in Delaware, Verizon-New Hampshire has inappropriately included the fixed "getting started" cost in the minute of use rate element. In New Hampshire, the getting started cost is 25 percent of the total switch investment.[13] The average current processor utilization for Verizon switches in New Hampshire is *** [14] *** At these low levels of processor utilization, the amount of traffic could *** *** without

[13] This can be calculated from Verizon's SCIS Total Investment output report by dividing the total getting started cost by the total switch investment.

[14] Average Processor utilization is calculated by the SCIS/MO model based on user inputs. The average processor utilization calculated result can be viewed on the Unit Investment Report produced by the SCIS/MO model.

exhausting the processors; therefore, using the processor does not have an economic cost because adding calls or features causes no additional switch processing costs.[15] The mis-assignment of 25% of the total switch investment to the minute of use rate element will result in severe cost overrecovery as minutes grow and Verizon collects increased revenues, but its fixed costs remain static.

22. In New Hampshire, Verizon has mis-assigned the Lucent Equivalent POTS Half Calls. This is extremely important in New Hampshire because Verizon models its network with one hundred percent Lucent switches. The error leads to a substantial overstatement of the minute of use cost and understatement of the ports' costs.

E. Verizon Inflates The Minute Of Use Element Rate When Converting From A Busy Hour Cost To Rate Period Prices That Result In Verizon Overrecovering Its Costs.

23. Another highly significant error in Verizon-New Hampshire's cost methodology relates to its MOU rate element. To calculate a minute of use rate element for unbundled switching, Verizon initially calculated the cost for a "busy hour," *i.e.*, the peak usage. Those busy-hour minute of use costs are then converted to a cost for "any hour of the day" by multiplying a 11 percent busy hour to total business day (BHTD) ratio and then dividing by 252 business days per year.[16] This calculation ensures that Verizon will recover 100 percent of the costs from traffic that occurs on business days.

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[15] Verizon acknowledged this in Massachusetts when it determined to exclude getting started costs from the reciprocal compensation rate because additional traffic did not cause any incremental getting started cost.

[16] As shown in VZ's Workpaper Part B-7.2, page 1, VZ performs this calculation in a slightly different, but mathematically identical, way by dividing the busy hour cost per minute of use by 2,290.91 before further allocating the cost to the different rate periods.

24. This calculation may be acceptable for business-related service cost studies, such as Centrex, but it is entirely inappropriate for a wholesale rate element that will be used by residential and business customers. The revenue received from the minute of use rate element in the remaining 113 days of the year would be pure profit to Verizon because its has calculated that rate element to ensure that it fully recovers its costs from the traffic occurring on business days. Instead of Verizon's method, the proper approach is plainly to divide the peak period costs over all 365 days per year, because the switch will in fact be used all of the days of the year.[17]

IV. CONCLUSION

25. For the foregoing reasons, Verizon's Delaware and New Hampshire switching rates are substantially inflated by myriad clear TELRIC errors.

[17] Note that in Delaware, Verizon assumed *** *** per year to allow for the fact that traffic is slightly reduced on weekends. In New York and Massachusetts, the state commissions ordered Verizon to use 308 days per year. Massachusetts also found that the peak to busy hour ratio was based on old data and recognized that internet usage and other changes in the way subscriber's use the landline network have flattened the peakedness and ordered a 7 percent busy hour to total day ratio to be used.

VERIFICATION PAGE

I declare under penalty of perjury that the foregoing Declaration is true and correct.

/s/ Catherine E. Pitts

Catherine E. Pitts

Executed on: July 17, 2002

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I declare under penalty of perjury that the foregoing Declaration is true and correct.

/s/ Michael R. Baranowski

Michael R. Baranowski

Executed on: July 17, 2002